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**What is Claimed is:**

1. A method of generating a template in an implantable medical device, comprising:
  - sensing a plurality of events;
  - determining whether there are first consecutive events of the plurality of events having first characteristics;
  - identifying a predetermined number of events of the plurality of events subsequent to the first consecutive events having second characteristics as first selected events; and,
  - generating the template from the first selected events.
2. The method of claim 1, wherein the first characteristics correspond to two consecutive events that are ventricular sensed events having RR-intervals greater than a threshold interval.
3. The method of claim 1, wherein the second characteristics include being a ventricular sense event other than a ventricular pace event, a ventricular sense event having an R-R interval greater than a predetermined rate, a ventricular sense event other than a first ventricular sense event immediately following a ventricular pace event, and a ventricular sense event that was immediately preceded by an atrial pace event and for which an interval between the ventricular sense event and the atrial pace event is greater than a threshold interval.
4. The method of claim 3, wherein the predetermined rate is approximately equal to 600 ms and the threshold interval is approximately equal to 100 ms.
5. The method of claim 1, further comprising:

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computing a cross-match between the predetermined number of events identified as first selected events to generate cross-matches; and

determining whether a predetermined number of the generated cross-matches are within a predetermined cross-match threshold, wherein the template is generated from events of the predetermined number of events corresponding to the cross-matches determined to be within the cross-match threshold.

6. The method of claim 5, further comprising:

determining, in response to the predetermined number of the generated cross-matches not being within a predetermined cross-match threshold, whether a predetermined number of cross-match computations have failed to generate the predetermined number of generated cross-matches that are within the predetermined cross-match threshold; and

generating a delay in response to the predetermined number of cross-match computations having failed to generate the predetermined number of generated cross-matches that are within the predetermined cross-match threshold.

7. The method of claim 1, further comprising:

determining whether a predetermined number of events of the plurality of events have been identified as other than first selected events;

determining, in response to the predetermined number of events of the plurality of events being identified as other than first selected events, whether there are second consecutive events of the plurality of sensed events having the first predetermined characteristics;

identifying the predetermined number of events of the plurality of events subsequent to the second consecutive events having the second predetermined characteristics as second selected events; and

generating the template from the second selected events.

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8. The method of claim 7, wherein the first characteristics correspond to two consecutive events that are ventricular sensed events having RR-intervals greater than a predetermined threshold.

9. The method of claim 8, wherein the second characteristics include being a ventricular sense event other than a ventricular pace event, a ventricular sense event having an R-R interval greater than a predetermined rate, a ventricular sense event other than a first ventricular sense event immediately following a ventricular pace event, and a ventricular sense event that was immediately preceded by an atrial pace event and for which an interval between the ventricular sense event and the atrial pace event is greater than a threshold interval.

10. The method of claim 9, wherein the predetermined rate is approximately equal to 600 ms and the threshold interval is approximately equal to 100 ms.

11. The method of claim 1, further comprising:  
determining whether RR-intervals associated with the first selected events are greater than an average RR-interval;  
computing, in response to the RR-intervals associated with first selected events being greater than an average RR-interval, a cross-match between the predetermined number of events identified as first selected events to generate cross-matches; and  
determining whether a predetermined number of the generated cross-matches are within a predetermined cross-match threshold, wherein the template is generated from events of the predetermined number of events corresponding to the cross-matches determined to be within the cross-match threshold.

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12. The method of claim 1, further comprising:
  - determining whether there are second consecutive events of the plurality of sensed events having the first predetermined characteristics;
  - identifying the predetermined number of events of the plurality of events having the second predetermined characteristics as second selected events;
  - determining whether a predetermined number of the second selected events match the template;
  - computing a cross-match between the predetermined number of events of the plurality of events identified as second selected events to generate cross-matches;
  - determining whether a predetermined number of the generated cross-matches are within a predetermined cross-match threshold; and
  - updating the template from events of the predetermined number of events corresponding to the cross-matches determined to be within the cross-match threshold.
13. The method of claim 12, wherein the first characteristics correspond to two consecutive events that are ventricular sensed events having RR-intervals greater than a threshold interval.
14. The method of claim 13, wherein the second characteristics include being a ventricular sense event other than a ventricular pace event, a ventricular sense event having an R-R interval greater than a predetermined rate, a ventricular sense event other than a first ventricular sense event immediately following a ventricular pace event, and a ventricular sense event that was immediately preceded by an atrial pace event and for which an interval between the ventricular sense event and the atrial pace event is greater than the threshold interval.

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15. The method of claim 14, wherein the predetermined rate is approximately equal to 600 ms and the threshold interval is approximately equal to 100 ms.

16. The method of claim 1, further comprising:

- (i) determining whether there are next consecutive events subsequent to the first selected events having the first predetermined characteristics;

- (ii) identifying the predetermined number of events of the plurality of events subsequent to the next consecutive events having the second predetermined characteristics as next selected events;

- (iii) determining whether a predetermined number of the next selected events match the template;

- (iv) incrementing a first counter in response to the predetermined number of the next selected events matching the template;

- (v) determining the template is valid in response to the first counter being equal to a predetermined threshold value; and

- (vi) repeating (i)-(iv) in response to the first counter not being equal to the predetermined threshold value.

17. The method of claim 16, wherein the first characteristics correspond to two consecutive events that are ventricular sensed events having RR-intervals greater than a predetermined threshold.

18. The method of claim 17, wherein the second characteristics include being a ventricular sense event other than a ventricular pace event, a ventricular sense event having an R-R interval greater than a predetermined rate, a ventricular sense event other than a first ventricular sense event immediately following a ventricular pace event, and a ventricular sense event that was immediately preceded by an atrial pace event and for which an interval between the

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ventricular sense event and the atrial pace event is greater than a threshold interval.

19. The method of claim 18, wherein the predetermined rate is approximately equal to 600 ms and the threshold interval is approximately equal to 100 ms.

20. The method of claim 16, further comprising:

- incrementing a second counter in response to the predetermined number of the next selected events not matching the template;

- computing a cross-match between the predetermined number of events of the plurality of events identified as next selected events to generate cross-matches;

- determining whether a predetermined number of the generated cross-matches are within a predetermined cross-match threshold; and

- updating the template from events of the predetermined number of events corresponding to the cross-matches determined to be within the cross-match threshold.

21. A method of generating a template in an implantable medical device, comprising:

- sensing a plurality of events;

- determining whether there are first consecutive events of the plurality of events having first characteristics;

- identifying a predetermined number of events of the plurality of events subsequent to the first consecutive events having second characteristics as first selected events;

- computing a first cross-match between the predetermined number of events identified as first selected events to generate first cross-matches;

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generating the template from the first selected events in response to a predetermined number of the generated first cross-matches being within a predetermined cross-match threshold;

determining whether there are second consecutive events of the plurality of sensed events having the first predetermined characteristics;

identifying the predetermined number of events of the plurality of events having the second predetermined characteristics as second selected events;

determining whether a predetermined number of the second selected events match the template;

computing a second cross-match between the predetermined number of events of the plurality of events identified as second selected events to generate second cross-matches;

determining whether a predetermined number of the generated second cross-matches are within the predetermined cross-match threshold; and

updating the template from events of the predetermined number of events corresponding to the second cross-matches determined to be within the cross-match threshold.

22. The method of claim 21, wherein the first characteristics correspond to two consecutive events that are ventricular sensed events having RR-intervals greater than a threshold interval.

23. The method of claim 22, wherein the second characteristics include being a ventricular sense event other than a ventricular pace event, a ventricular sense event having an R-R interval greater than a predetermined rate, a ventricular sense event other than a first ventricular sense event immediately following a ventricular pace event, and a ventricular sense event that was immediately preceded by an atrial pace event and for which an interval between the

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ventricular sense event and the atrial pace event is greater than a threshold interval.

24. The method of claim 23, wherein the predetermined rate is approximately equal to 600 ms and the threshold interval is approximately equal to 100 ms.

25. The method of claim 24, further comprising:

determining, in response to the predetermined number of the generated first cross-matches not being within a predetermined cross-match threshold, whether a predetermined number of cross-match computations have failed to generate the predetermined number of generated first cross-matches that are within the predetermined cross-match threshold; and

generating a delay in response to the predetermined number of cross-match computations having failed to generate the predetermined number of generated first cross-matches that are within the predetermined cross-match threshold.

26. The method of claim 24, further comprising:

determining whether a predetermined number of events of the plurality of events have been identified as other than first selected events;

determining, in response to the predetermined number of events of the plurality of events being identified as other than first selected events, whether there are third consecutive events of the plurality of sensed events having the first predetermined characteristics;

identifying the predetermined number of events of the plurality of events subsequent to the third consecutive events having the second predetermined characteristics as third selected events; and

generating the template from the third selected events.



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27. An implantable medical device, comprising:  
means for sensing a plurality of events;  
means for determining whether there are first consecutive events of the plurality of events having first characteristics;  
means for identifying a predetermined number of events of the plurality of events subsequent to the first consecutive events having second characteristics as first selected events; and  
means for generating the template from the first selected events.
28. The device of claim 27, wherein the first characteristics correspond to two consecutive events that are ventricular sensed events having RR-intervals greater than a threshold interval.
29. The device of claim 28, wherein the second characteristics include being a ventricular sense event other than a ventricular pace event, a ventricular sense event having an R-R interval greater than a predetermined rate, a ventricular sense event other than a first ventricular sense event immediately following a ventricular pace event, and a ventricular sense event that was immediately preceded by an atrial pace event and for which an interval between the ventricular sense event and the atrial pace event is greater than a threshold interval.
30. The device of claim 29, wherein the predetermined rate is approximately equal to 600 ms and the threshold interval is approximately equal to 100 ms.

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33. A computer-readable medium having computer-executable instructions for performing a method, comprising:

means for sensing a plurality of events;

means for determining whether there are first consecutive events of the plurality of events having first characteristics;

means for identifying a predetermined number of events of the plurality of events subsequent to the first consecutive events having second characteristics as first selected events; and

means for generating the template from the first selected events.

34. The computer-readable medium of claim 33, wherein the first characteristics correspond to two consecutive events that are ventricular sensed events having RR-intervals greater than a threshold interval.

35. The computer-readable medium of claim 34, wherein the second characteristics include being a ventricular sense event other than a ventricular pace event, a ventricular sense event having an R-R interval greater than a predetermined rate, a ventricular sense event other than a first ventricular sense event immediately following a ventricular pace event, and a ventricular sense event that was immediately preceded by an atrial pace event and for which an interval between the ventricular sense event and the atrial pace event is greater than the threshold interval.

36. The computer-readable medium of claim 35, wherein the predetermined rate is approximately equal to 600 ms and the threshold interval is approximately equal to 100 ms.